The Tapestry of Folk Customs in Ritual Expressions: Hsinchuang Dizang Temple's Lead Generals Performance

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ABSTRACT

Temples in Taiwan host colourful parades for birthdays of the divinities on specific dates of the lunar calendar, per ancient folk customs. These parades and rituals constitute a crucial and intangible heritage experience in Taiwan Culture. During these ritualistic festivals, leaders of the parade, known as 'Jia Jiang' (家將), put on heavy makeup, done colourful, religiously-symbolic costumes and move in a distinctive, choreographed procession that mesmerizes many. The Jia Jiang's are folklore characters widely loved by the Taiwanese, and indelibly reenacted in dramas, animations and video games in pop culture.

Hsinchuang Dizang Temple (De Záng An), located in New Taipei City, is a Buddhist temple dedicated to Kṣitigarbha Bodhisattva, built in the mid-eighteen century to lay the neglected ghosts to eternal rest. The temple's annual neglected ghost worship ceremony has been running for over a century. This ritual activity is listed as an intangible cultural heritage, the legacy of which also includes the ritual performance of 'Lead Generals (Guān jiāng shǒu)', which had originated here.

The heavy crowd and limited space of the temple courtyard have resulted in a scarcity of thorough documentation of performers' choreographed movements, and the import within. To secure the legacy of Lead Generals, and further expand the application of edutainment purposes, this study adopts the Optical Motion Capture as its digital documentation approach.

The tracking technique in Optical Motion Capture digitalizes the locomotion and performance of parade formations into 3D motion information. The information curated can thus be transformed and shared via a 3D-model platform, Sketchfab.

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In comparison with the traditional mentor-mentee materials (e.g. the textual narrative, or 2D images and video recording), 3D digital motion information can vividly present both the dynamic picture of parade formations and individual figures' movements, to timelessly acknowledges the ritualistic elements. The above outcome offers a more ideal solution in education programs, animations, interactive performance, and intangible cultural heritage preservation in the post-COVID-19 era.

Key Words: Digital Documentation; Intangible Cultural Heritage (ICH); Lead Generals; Optical Motion Capture.

El Mosaico de Costumbres Populares en las Expresiones Rituales: Performance de los Generales Principales del Templo Hsinchuang Dizang

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RESUMEN

Los templos taiwaneses celebran sus desfiles en los aniversarios de las divinidades según fechas determinadas por el calendario lunar. Estos relevantes desfiles y rituales son el patrimonio intangible esencial de la cultura de Taiwán. Durante el festival ritual, los líderes del desfile llamado "Jia Jiang" (家 將) usan maquillaje en la cara y trajes religiosos únicos al que acompañan movimientos distintivos. Son los personajes inequívocos del folclore, pero también las claras figuras que han sido ampliamente adaptadas en dramas, animaciones y videojuegos en la cultura popular de Taiwán.

En la ciudad de New Taipei, el Templo Hsinchuang Dizang (De Záng An), un templo budista dedicado al Bodhisattva Kṣitigarbha fue construido para dar descanso a los fantasmas abandonados a mediados del siglo XVIII en Taiwán. La ceremonia anual de adoración a los fantasmas abandonados del templo ha estado funcionando durante más de un siglo. Esta actividad ritual forma parte del listado del patrimonio cultural inmaterial que incluye el ritual de "Generales Líderes (Guān jiāng shǒu)", el cual se originó aquí.

Debido a la multitud y al espacio limitado del patio del templo, se carece de una documentación completa de los detalles de los movimientos de los artistas. Para asegurar la transmisión patrimonial de los Generales Líderes (Guān jiāng shǒu) y ampliar la aplicabilidad del entretenimiento educativo, este estudio adoptó el enfoque de documentación digital mediante la Captura Óptica del movimiento.

A través de la técnica del seguimiento de la captura óptica del movimiento, se digitaliza la locomoción y la actuación de las formaciones en los desfiles en información de 3D en movimiento. La información se ha transformado y compartido a través de la plataforma de modelos 3D, Sketchfab.

En comparación con los sistemas tradicionales de mentor-aprendiz (por ejemplo, la narrativa textual o imágenes en 2D y la grabación de vídeo), la información de movimiento digital en 3D puede presentar de manera más elaborada tanto la imagen dinámica de las formaciones del desfile como los movimientos de las figuras individuales con su duración y espacialidad características. El resultado obtenido permite una mejor aplicación en los programas educativos, animaciones, actuación interactiva, así como el propósito de una mejor conservación del patrimonio cultural inmaterial en el mundo post-CoVID-19.

Palabras Clave: Documentación Digital; Patrimonio Cultural Inmaterial (PCI); Generales Jefe; Captura Óptica de Movimientos.

La Coutume Populaire s'entrecroise dans l'Expression Rituelle :Performance de Généraux en Têtes du Temple de Hsinchuang Dizang

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RÉSUMÉ

Selon les anciennes coutumes populaires, les temples à Taïwan accueillent les parades colorées pour les divinités dans les dates spécifiques du calendrier lunaires. Ces défilés et rituels constituent une expérience cruciale et immatérielle du patrimoine dans la culture taïwanaise. Au cours de ces festivals rituels, les leaders de parades, connus sous le nom « Jia Jiang » (家將), se maquillent lourdement, mettent les costumes colorés et religieux et aussi se déplacent dans un cortège avec distinctive chorégraphie qui en fascinent beaucoup. Les « Jia Jiang » sont des personnages folkloriques très appréciés par des Taïwanais et reproduits de manière indélébile dans les séries, les animations et les jeux vidéo de la culture pop.

Situé dans la ville de Nouveau Taipei, le temple Hsinchuang Dizang (De Záng An) est l'un de bouddhiste dédié au Bodhisattva Kṣitigarbha construit au milieu du XVIIIe siècle pour mettre les fantômes négligés au repos éternel. Le culte annuel de fantômes négligés se déroule depuis plus d'un siècle par le temple. Cette activité rituelle est énumérée comme un patrimoine culturel immatériel, dont cela inclut également la performance rituelle de « Généraux en Têtes », qui tirait son origine ici.

À cause de la foule et l'espace limité de la cour du temple, il se manque une façon d'enregistrer et d'imprimer les mouvements chorégraphies dans le document approfondi. Ainsi que pour sécuriser le legs de Généraux en Têtes et d'étendre des objectifs édumusements, cette étude adopte la capture de mouvement optique pour une approche de document numérique.

La technique de suivi dans la capture de mouvement optique numérise la locomotion et les performances des formations de parade pour créer les informations de mouvement 3D. Par conséquent, les informations intégrées peuvent transformer et partager via une plateforme de modèles 3D, Sketchfab. Par rapport aux matériaux traditionnels entre le mentor et le mentoré (par ex., le récit textuel et l'enregistrement des images et vidéos 2D), les informations de mouvement numérique 3D pourrait

présenter la parade à la manière vivante avec les images dynamiques et les mouvements des personnages individuels, notamment pour les reconnaître éternellement les éléments ritualistes. Le résultat ci-dessus donne une meilleure pratique dans les programmes éducatifs, les animations, les performances interactives et la préservation du patrimoine culturel immatériel dans l'époque post-COVID-19.

Mots Clés: Documentation Numérique; Patrimoine Culturel Immatériel (PCI);Les Généraux Principaux; Capture Optique du Mouvement.

Der Mosaik der Volksbräuche in Rituellen Ausdrücken:
Die Leistung der Lead Generals
des Hsinchuang Dizang Tempels

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ZUSAMMENFASSUNG

In den Tempeln in Taiwan finden farbenfrohe Paraden zu Geburtstagen der Gottheiten an bestimmten Daten des Mondkalenders nach alten Volksbräuchen statt. Diese Paraden und Rituale sind ein entscheidendes und immaterielles Erbe in der taiwanesischen Kultur.

Während dieser rituellen Feste schminken sich die als „Jia Jiang" (家將) bekannten Führer der Parade schwer, ziehen farbenfrohe, religiös-symbolische Kostüme an und bewegen sich in einer unverwechselbaren, choreografierten Prozession, die viele fasziniert. Die Jia Jiangs sind Folklorefiguren, die von den Taiwanern sehr geliebt und in Dramen, Animationen und Videospielen der Popkultur unauslöschlich nachgestellt werden.

Der Hsinchuang Dizang Tempel (De Záng An) in der Stadt New Taipei ist ein buddhistischer Tempel, der dem Kṣitigarbha Bodhisattva gewidmet ist und Mitte des 18. Jahrhunderts erbaut wurde, um die vernachlässigten Geister zur ewigen Ruhe zu bringen.

Die alljährlich vernachlässigte Geisteranbetungszeremonie des Tempels findet seit über einem Jahrhundert statt. Diese rituelle Aktivität wird als immaterielles kulturelles Erbe aufgeführt, zu dessen Erbe auch die rituelle Aufführung der „Lead Generals (Guān jiāng shǒu)" gehört, die hier ihren Ursprung hatte.

Die große Menschenmenge und der begrenzte Raum im Tempelhof haben dazu geführt, dass die choreografierten Bewegungen der Darsteller und die Bedeutung innerhalb des Tempels kaum gründlich dokumentiert wurden. Um das Erbe der Lead Generals zu sichern und die Anwendung von Edutainment-Zwecken weiter auszubauen, wird in dieser Studie das Optical Motion Capture als digitaler Dokumentationsansatz verwendet.

Die Tracking-Technik in Optical Motion Capture digitalisiert die Fortbewegung und Leistung von Paradeformationen in 3D-Bewegungsinformationen.

Die kuratierten Informationen können somit über eine 3D-Modellplattform, Sketchfab, transformiert und geteilt werden. Im Vergleich zu den traditionellen Mentor-Mentee-Materialien (z. B. der Texterzählung oder 2D-Bildern und Videoaufzeichnung) können digitale 3D-Bewegungsinformationen sowohl das dynamische Bild von Paradeformationen als auch die Bewegungen einzelner Figuren anschaulich darstellen, um die rituellen Elemente zeitlos anzuerkennen.

Das obige Ergebnis bietet eine idealere Lösung für Bildungsprogramme, Animationen, interaktive Aufführungen und die Erhaltung des immateriellen Kulturerbes in der Zeit nach COVID-19.

Schlüsselwörter: Digitale Dokumentation; Immaterielles Kulturerbe (ICH);Lead Generals; Optische Bewegungserfassung.

Il Mosaico Delle Usanze Popolari Nelle Espressioni Rituali: Performance dei Principali Generali del Tempio di Hsinchuang Dizang

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RESUMO

I templi di Taiwan ospitano sfilate colorate per i compleanni delle divinità in date specifiche del calendario lunare, secondo antiche usanze popolari. Queste sfilate e rituali costituiscono un'esperienza del patrimonio cruciale e immateriale nella cultura di Taiwan. Durante queste feste rituali, i leader della parata, noti come "Jia Jiang" (家將), si truccano pesantemente, indossano costumi colorati e simbolici religiosi e si muovono in una processione coreografica distintiva che ipnotizza molti. I Jia Jiang sono personaggi folcloristici molto amati dai taiwanesi e reinterpretati in modo indelebile in drammi, animazioni e videogiochi nella cultura pop.

Il tempio di Hsinchuang Dizang (De Záng An), situato nella città di Nuova Taipei, è un tempio buddista dedicato a Kṣitigarbha Bodhisattva, costruito a metà del diciottesimo secolo per porre i fantasmi trascurati all'eterno riposo. La cerimonia annuale di adorazione dei fantasmi trascurata nel tempio è in corso da oltre un secolo. Questa attività rituale è elencata come un patrimonio culturale immateriale, la cui eredità include anche la performance rituale di "Lead Generals (Guān jiāng shǒu)", che aveva avuto origine qui.

La folla fitta e lo spazio limitato del cortile del tempio hanno portato a una scarsità di documentazione completa dei movimenti coreografici degli artisti e dell'importanza all'interno. Per garantire l'eredità dei Lead Generals ed espandere ulteriormente l'applicazione degli scopi di edutainment, questo studio adotta Optical Motion Capture come approccio alla documentazione digitale.

La tecnica di tracciamento in Optical Motion Capture digitalizza la locomozione e le prestazioni delle formazioni di parata in informazioni di movimento 3D. Le informazioni curate possono così essere trasformate e condivise tramite una piattaforma modello 3D, Sketchfab.

In confronto ai tradizionali materiali mentore-mentee (ad esempio la narrativa testuale, o immagini 2D e registrazione video), le informazioni di movimento digitale 3D possono presentare vividamente sia l'immagine dinamica delle formazioni di parata che i movimenti delle singole figure, per riconoscere senza tempo gli elementi ritualistici. Il risultato di cui sopra offre una soluzione più ideale nei programmi educativi, animazioni, performance interattive e conservazione del patrimonio culturale immateriale nell'era post-COVID-19.

Parole Chiave: Documentazione Digitale; Patrimonio Culturale Immateriale (ICH); Lead Generali; Acquisizione Ottica del Movimento.

O Mosaico de Costumes Populares em Expressões Rituais:
Apresentação dos Principais Generais
do Templo Hsinchuang Dizang

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RESUMEN

Os templos em Taiwan hospedam desfiles coloridos para aniversários das divindades em datas específicas do calendário lunar, de acordo com os antigos costumes populares. Esses desfiles e rituais constituem uma experiência de patrimônio imaterial crucial na cultura de Taiwan.

Durante esses festivais ritualísticos, os líderes do desfile, conhecidos como 'Jia Jiang' (家將), colocam maquiagem pesada, vestem trajes coloridos e religiosamente simbólicos e se movem em uma procissão distinta e coreografada que fascina muitos. Os Jia Jiang são personagens folclóricos amplamente amados pelos taiwaneses e indelevelmente reencenados em dramas, animações e videogames na cultura pop.

O Templo Hsinchuang Dizang (De Záng An), localizado na cidade de New Taipei, é um templo budista dedicado ao Bodhisattva Kṣitigarbha, construído em meados do século dezoito para dar um descanso eterno aos fantasmas abandonados. A cerimônia anual de adoração ao fantasma negligenciada do templo já ocorre há mais de um século. Esta atividade ritual é listada como um patrimônio cultural intangível, o legado do qual também inclui a performance ritual de "Principais generais (Guān jiāng shǒu)", que se originou aqui.

A grande multidão e o espaço limitado do pátio do templo resultaram em uma escassez de documentação completa dos movimentos coreografados dos performers e sua importância. Para proteger o legado de Lead Generals e expandir ainda mais a aplicação de propósitos de educação e entretenimento, este estudo adota a Captura Ótica de Movimento como sua abordagem de documentação digital.

A técnica de rastreamento em Optical Motion Capture digitaliza a locomoção e o desempenho de formações de desfile em informações de movimento 3D.

As informações com curadoria podem ser transformadas e compartilhadas por meio de uma plataforma de modelo 3D, Sketchfab. Em comparação com os materiais mentor-pupilos tradicionais (por exemplo, a narrativa textual ou imagens 2D e gravação de vídeo), as informações de movimento digital 3D podem apresentar vividamente a imagem dinâmica das formações de desfile e os movimentos das figuras individuais, para reconhecer atemporalmente os elementos ritualísticos. O resultado acima oferece uma solução mais ideal em programas de educação, animações, performance interativa e preservação do patrimônio cultural intangível na era pós-COVID-19.

The Tapestry of Folk Customs in Ritual Expressions:
Hsinchuang Dizang Temple's Lead Generals Performance.

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The Evolution of Intangible Cultural Heritage in the Digital World

Digital technology has now become an important knowledge and tool for the safeguarding of intangible cultural heritage. Motion capture technology can document analogical motion into digital data. Used in traditional performing arts, it can catalogue action information accurately and realistically. Compared with the traditional abstract text, 2D images or video recordings, 3D digital action information, can offer a higher-quality, all-round display of the performance on stage, all the nuances beautifully captured; it can also offer scientific data analysis, which is more conducive to the digitization of intangible cultural heritage, accomplishing greater learning, animation, interactive performance efficiency and other applications. The digital documentation process for tangible heritage practices and performing arts is found to be more prevalent than that for intangible heritage.

This paper aims to make "Lead Generals in Hsinchuang Dizang Temple" the centrepiece of performing arts in Taiwan's folk religion by using the optical motion capture system to document performers' movements, and translate the various formations of performance troupe into 3D digital information. This is an interdisciplinary integrated study that includes religious folklore, performing arts, and digital technology.

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The Digital Safeguarding of Intangible Cultural Heritage

Nowadays, industrialization, urban development, the expansion of services, the growing uniformity of lifestyles in towns and villages, and of the various forms of knowledge and skills all constitute a context, which places intangible cultural heritage in a vulnerable position.

Intangible cultural heritage (ICH) is a 'living heritage', the idea of which is not to preserve rigidly entrenched age-old practices, but rather, to enable them to develop and evolve with times, and to encourage practices that are embedded in contemporary society and interact with other cultures.

ICH is defined in the UNESCO's **(3)** 2003 *Convention for the Safeguarding of the Intangible Cultural Heritage* as daily rituals and traditions, which includes performing arts, social rituals, knowledge and practices about nature and the universe, traditional craftsmanship and oral traditions as well as oral history **(4)**.

The notion of 'safeguarding' in the *Convention* is described as:

> …measures aimed at ensuring the viability of intangible cultural heritage, including the identification, documentation, research, preservation, protection, promotion, enhancement, transmission, particularly through formal and non-formal education, as well as the revitalization of various aspects of such heritage.

Lowe (2013) has stated that heritage has come to be defined as a resource that must be sustained and made available to all, through international policy advocacy. These policy choices have contributed to a shift specifically towards the preservation of intangible heritage, and the need and possibilities of it to fulfil all the definitions of an economic, cultural, social, and natural resource.

Yet the notion of safeguarding has been diversified by the politics and mechanisms of digital circulation.

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3) The United Nations Educational, Scientific and Cultural Organization. https://en.unesco.org/.
4) UNESCO, Convention for the Safeguarding of the Intangible Heritage. Retrieved from https://ich.unesco.org/en/convention.

UNESCO produced the *Convention for the Safeguarding of the Intangible Heritage* and the *Charter on the Preservation of the Digital Heritage* **(5)** in the same year of 2003. Both policy documents have become vital for researchers to think through a range of local practices and approaches to documenting and representing intangible heritage in the name of transmission to future generations.

These documents, according to Hennessy's fieldwork experiences (2012; 2013), also highlighted local approaches to ownership and control of cultural heritage and its digital representation as central to the notion of safeguarding.

The process of safeguarding intangible heritage involves the collection, documentation and archiving of cultural property and the protection and support of its bearers (Bouchenaki, 2004). The fate of intangible heritage is thus far more closely related to its creators as it depends in most cases on its actual oral transmission in given cultural contexts. Safeguarding intangible heritage calls for its 'translation' from the oral form into some other form of materiality, e.g. archives, inventories, museums and audio or film records.

The digital era has enabled numerous methods to capture tacit knowledge. The first step of documenting intangible heritage is to capture it while protecting its ownership. If not captured, this knowledge will one day vanish, without a memorable frame of reference for the future generation.

The main purpose of documenting intangible cultural heritage is to preserve the past, while providing an access to its richness in future. There should be a collaborative relationship between cultural and educational institutions to fulfil this task.

The incubation of cultural knowledge bases and the inauguration of folk creativity centres is crucial for the acquisition and storage of intangible heritage in digital form.

These considerations are important as the 'digital heritage' has moved front-and-centre in international preservation endeavours.

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5) UNESCO, Charter on the Preservation of the Digital Heritage, 2003.

Digital heritage is defined in the *Charter on the Preservation of the Digital Heritage* as consisting of:

> …unique resources of human knowledge and expression. It embraces cultural, educational, scientific and administrative resources, as well as technical, legal, medical and other kinds of information created digitally, or converted into digital form from existing analogue resources. Where resources are "born digital", there is no other format but the digital object.
>
> Digital materials include texts, databases, still and moving images, audio, graphics, software, and web pages, among a wide and growing range of formats. They are frequently ephemeral, and require purposeful production, maintenance and management to be retained.
>
> Many of these resources have lasting value and significance, and therefore constitute a heritage that should be protected and preserved for current and future generations. This ever-growing heritage may exist in any language, in any part of the world, and in any area of human knowledge or expression **(6)**.

The digital documentation process should not be regarded as merely 'freezing' ICH in different media formats only. Hennessy (2013) suggest that there are diverse approaches to safeguarding in the digital age by exploring the potential of ICH as well as enlarging the application.

European Commission **(7)** has integrated ICT policy action into the announced 2020 #Digital4Culture strategy, using the digital potential to enhance the positive economic and societal effects of culture.

However, it should be clear that this constitutes only one aspect of safeguarding process, and that greater care and attention should be given to choosing the most appropriate modern ethnographic approaches to better understand the realistic potential of preservation politics.

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6) UNESCO, Charter on the Preservation of the Digital Heritage. Retrieved from http://portal.unesco.org/en/ev.php-URL_ID=17721&URL_DO=DO_TOPIC&URL_SECTION=201.html.

7) Parliamentary Assembly of the Council of Europe (2019), Safeguarding and enhancing intangible cultural heritage in Europe. Retrieved from

http://assembly.coe.int/nw/xml/XRef/Xref-XML2HTML-en.asp?fileid=26468&lang=en.

The Transformation of Folklore Legacy in Taiwan

In this digital era, the documenting process of intangible heritage is easily achieved through the use of multimedia technologies; its application helps to preserve undocumented intangible heritage, expressions, social rituals, daily rituals, performing arts, oral traditions, knowledge, and practices, etc. An innovative alternative model where folklore is sustained by digital technology is, however, foreseeable to help the preservation of intangible practices in an interdependent globalized world, where software not only mediates but also re-configures embodiments and interactions in an ever more digital environment.

According to ethnologists and folklorists (Lash, 2002; Pink; Poster, 2006; Hand, 2008; Nfah-Abbenyi, 2011), oral traditions and folklore are threatened by problematic issues linked to globalization movement, such as modern wars, post capitalistic economy, massive migration and the encumbrance of global media industries. The aforesaid scenarios have left some ethnologists and folklorists reluctant to acknowledge the benefits of digital documenting process of intangible cultural practices, as they are concerned about the misuse of its values given that these practices can be objectified into merchandises/artefacts to be consumed by tourism or commodification.

Parallels can be found between Taiwan's folklore and traditional performing arts and those in most places throughout the world, that they rely primarily on the mentorship of oral transmission and the written/ printed record of texts and images. Instead of hesitating in the digital unknown, the benefits of encompassing a larger audience throughout the implementation of new media are being seriously considered and increasingly applied in Taiwan.

In recent years, the cultural content and elements of folk religions in Taiwan, e.g. figurines of deities, plus myths and folk tales surrounding these supreme beings, have been adopted by the country's cultural and creative industries for innovative uses, and re-envisioned in new media, film, and the ACG (Anime, Comic and Games) fields. In particular, the 'Lead Generals (Guān jiāng shǒu)' as the listed intangible cultural heritage; the Taiwanese cultural embodiment of the "Lead Generals' has been widely appropriated for tourism promotion, comic, and video game (Figure 1).

Figure 1a
Lead Generals in London. A bus in London covered with an ad promoting tourism in Taiwan (**8**)

Figura 1b.
Rites Of Returning/ The Summer of Temple Fair (Comic book, 2017) **(9)**

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8) The News Lens, Taiwan Tourism Ad in London Raises Discussion. Retrieved from https://international.thenewslens.com/article/28968.
9) Books from Taiwan, RITES OF RETURNING. Retrieved from https://booksfromtaiwan.tw/books_info.php?id=131.

Figure 1c.
Pa Gui **(10)** (Video game, 2019) **(11)**

Generally speaking, individual interpretations and perceptions have contributed to either add-on's or revisions in the spans between generations. Furthermore, the varied bodies of folk expressions, and the different documentation approaches for the impartation of the legacy sometimes result in missing elements and controversy of authenticity after decades and centuries.

For instance, Hsinchuang Dizang Temple's Lead Generals only performs once a year during the annual procession of the ritual festival for the neglected ghosts. Although the members of performance troupe are amateurs who invariably begin to rehearse the formation in the evening approximately two months before the festival, the troupe would always be strictly organised and mentored by the senior members.

The Lead Generals ritual originates in northern Taiwan, and the practice was later picked up by people in the south. As the sense of identity and emotional bond with Taiwanese folk culture strengthens over the generations, the Lead Generals grow to be one of the highlight activities in Taiwanese temple fairs.

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10) "Pa Gui" a term from Taiwanese folk dialect, meaning "exorcism" or "defeat the spirits".
11) STEAM, Indie Games, PAGUI. Retrieved from https://store.steampowered.com/app/986680/PAGUI/?.

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To garner more attention, some of the more enterprising professional troupes devise new additional figures and recreation gimmicks in their repertoire to attract more audience, which translates into greater commercial success. But all those glitters are not gold: these new additions may seem impressive but lacks genuine substance in the overall folk culture and legacy experience.

The challenge confronting some of the most celebrated temple festival performance troupes, is that firstly, the veteran performers are gradually aged out; secondly, the troupes are finding it difficult to attract young apprentices. A great majority of performers in the Lead Generals' folk worship presentation and formations are mentored through oral instructions; absent is a specific coaching manual. Additionally, let us examine the parade formation ritual of 'Appointing Generals' (Hǎn bān) in Lead Generals: each of the blocking pattern contains special meaning in religious folklore and traditional performing arts.

Given that the blocking formation is only shown as a once-in-a-year event, it invariably is a show-stopper that never fails to enthral the spectators; nonetheless, the throng of the crowd and the coming-and-going of audience members makes it hard to appreciate the magnificence of the whole performance without interruption. Despite a notable increase in the adaptation of folklore elements in popular culture, a systematic approach of digital safeguarding in folklore legacy is rarely highlighted in Taiwan (Syu, Chen & Tu, 2020).

Meanwhile, uncertainties and conflicts in the digital age should also be constructively channelled into the ICH documentation discourse aimed at the safeguarding process, since members of the temple performance troupes are often stereotypically identified as bovver boots. Therefore, the digital safeguarding of folklore legacy in Taiwan is more than necessary progress in ICH documentation: it is also socially significant, as it upholds the value of the folk heritage, while destigmatizing the imputation conventionally associated with folk performance troupes.

## The Invented Tradition: Hsinchuang Dizang Temple's Lead Generals. (12)

ICH is an important part of the cultural heritage; it also helps to foster inter-cultural relationship among communities. It also strengthens the social value of positively expressing the cultural identity of a particular community.

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12) Guān Jiāng Shǒu of Xīnzhuang De Zàng An.

In this section, we shall explore the narrative of Hsinchuang Dizang Temple's Lead Generals and its background context in the development process. According to Taiwanese folklore, the Lead Generals used to be evil spirits who caused widespread unrest in the world of the mortals. Later on, Ksitigarbha tamed them to be its bodyguards.

Kṣitigarbha is regarded as the bodhisattva of hell-beings, the guardian of the dead in Taiwanese culture. The performing formation of Lead Generals is a classic ritual that pays homage to a unique religious belief and traditional performing arts in Taiwan. The Location of Hsinchuang Dizang Temple, New Taipei City, Taiwan (Figura 2).

Figure 2
The Location of Hsinchuang Dizang Temple, New Taipei City, Taiwan
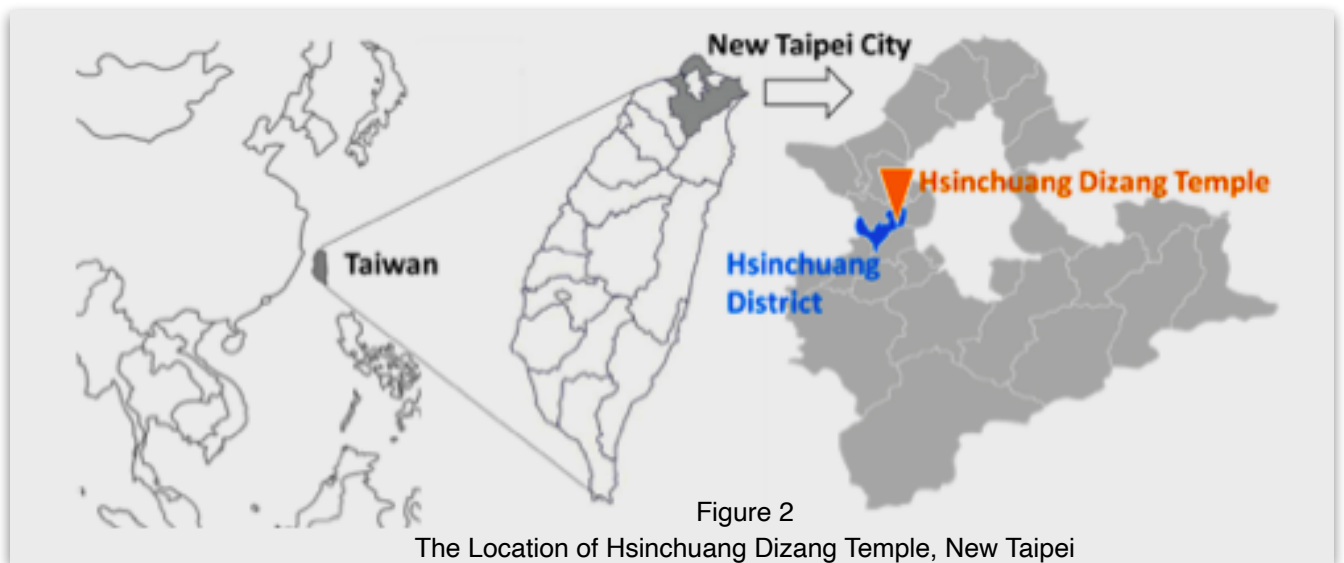
The Origin of Hsinchuang Dizang Temple and Folklore Rituals

The history of Hsinchuang Dizang Temple in New Taipei City can be traced back to 1757. It becomes one of the most celebrated temples in Taiwan, thronged constantly with piteous worshipers. The main hall enshrines is where God - Ksitigarbha Bodhisattva is enshrined, whereas the south hall is claimed by the "neglected ghosts (Wen-Wu Dazhong ye)"**(13)** in eternal rest, and the subordinated worship of two 'Lead Generals': the General of 'Grow' (in charge of lengthening the lifespan and happiness of the moral people), characterized by a red face and tusks, and the General of *'Lessen'* (who is responsible for shortcutting bad people's lot in life), who sports a green face and tusks.

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13) In Taiwanese folklore, people apotheosize the neglected ghosts as Dazhong ye. Dazhong ye who die by illness or poverty called Wen Dazhong ye, Wen means literati; who die by wars or strifes call Wu Dazhong, Wu means warriors.

During the Qing Rule (1683-1895), Taiwan's folklore believers were known to don costumes of a mythical figure, 'Jia Jiang (Law enforcement officers of God)', to run God's errands.

They join the festival patrol and pilgrimage alongside the ambrosial palankeen to express their willingness to serve the deities. Later, organizers of the procession began to create individual performing formation and ritual figures, and Hsinchuang Dizang Temple is no exception.

According to Lu (2002), Huang Giu-shui, the founder of Hsinchuang Dizang Temple's Troupe in 1925, did not institute the performing formation in the beginning. The initiate of the current 'Lead Generals' performance setting was designed by the major general, Zhou Han-yi **(14)** for Huang and his troupe in 1945.

He helped to create the costumes, makeup, instruments, dance blockings and the rituals for both Consecration and Appointing Generals.

In 1946, Huang and his troupe debuted the 'Lead Generals' performance to the public in the annual ritual festival of Hsinchuang Dizang Temple. Due to the growing demand of local believers, the pilgrimage of Hsinchuang Dizang Temple has expanded to three sub-troupes in three routes with two phases **(15)** starting in 1995, as they paraded the three largest villages, i.e. Hsinchuang, Touqianzhuang, and Zhonggang. Touqianzhuang troupe's Master Lin Hong Jie (Figure 4) says:

> …during the annual ritual festival, each route is assigned a Lead Generals troupe, complete with and individual timeslot for the parade formation ritual of 'Appointing Generals'.…
>
> ….the troupes serve primarily the Gods of Dizang Temple. Performance for private commissions was not accepted. We did this once a year to uphold an ancient tradition….
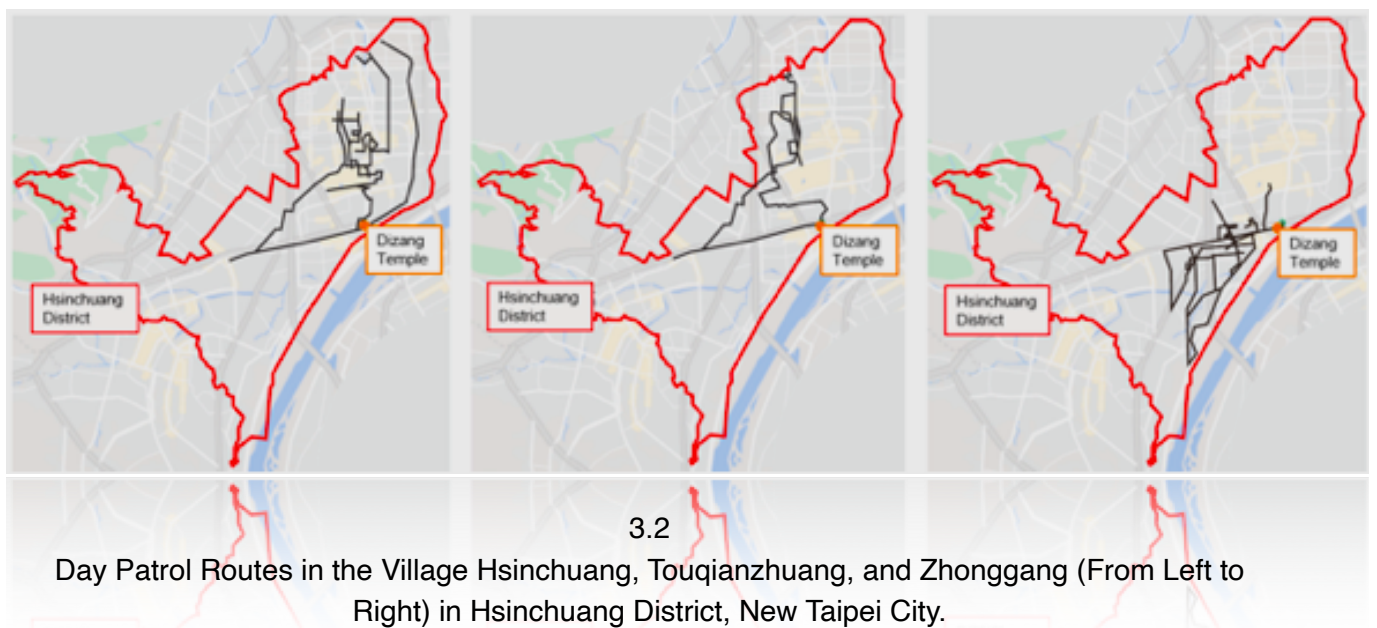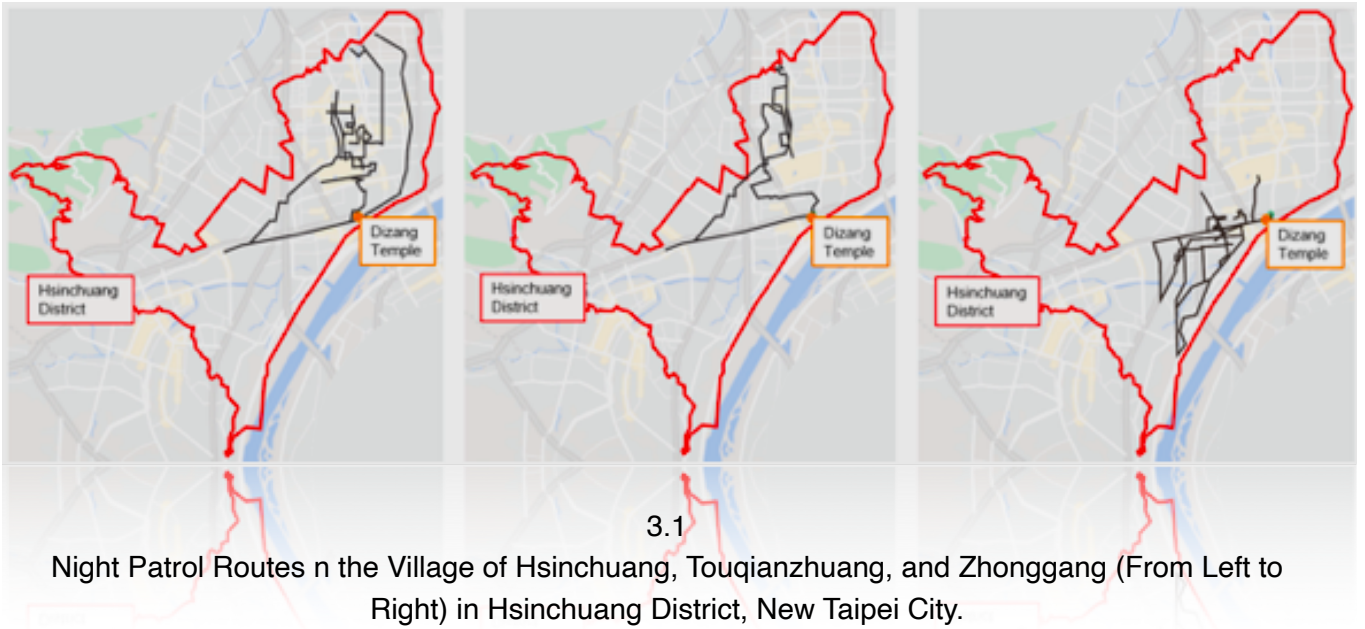
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14) The major general Zhou served for Republic of China Army as the 70th Army's director of political warfare in 1945. He imparted his folklore ritual experience in Gutian, Fujian to Mr. Huang Giu-shui.
15) The first phase is 'incognito visit' in the first day by walking through the lanes; and the second phase is the 'day patrol' in the next day by touring on the main roads.

Figure 3

The Lead Generals' Parade Routes of Night Patrol and Day Patrol **(16)**.

3.1

Night Patrol Routes n the Village of Hsinchuang, Touqianzhuang, and Zhonggang (From Left to Right) in Hsinchuang District, New Taipei City.

3.2

Day Patrol Routes in the Village Hsinchuang, Touqianzhuang, and Zhonggang (From Left to Right) in Hsinchuang District, New Taipei City.

_____

16) Source: Authors.

Figure 4
Interview with Master Lin Hong Jie on 1 November 2017 (17).

Figure 5
The Ritual of 'Appointing Generals' before the Day Patrol in 2018 Ceremony **(18).**

17) Source: Ibid
18) Source: Ibid

The birth ceremony for 'neglected ghosts (Dazhong ye)' falls on May 2 of the Lunar Calendar. The ritual festival parade includes the procession of the 'night patrol' on April 30, featuring walking through narrow lanes and alleys, whereas the procession of 'day patrol' on May 1 consists of a tour on arterial roads in full-throated glory. The annual ritual festival of Hsinchuang Dizang Temple has been one of the most spotlighted temple fairs in Taiwan for generations. In 2010, the New Taipei City Government designated this ritual festival as an intangible cultural heritage of folklore **(19)**.

The Lead Generals Performing Troupe of Touqianzhuang

A close partnership with the Lead Generals Performance Troupe of Touqianzhuang is one of the highlights of this unique study; it is grounded in a shared commitment of the authors and the troupe's chiefs to upholding this ritual legacy; the confidential relationship is established by the authors' student, Mr Kai Ping Chuang, who was the 'host of the incense burner (Lô̍-chú)' **(20)** of Touqianzhuang. The trust and camaraderie has enabled a successful digital documentation process that minutely catalogues the details of the ritual performance.

The 'Jiang Twan' (the ritual performing troupe) is a historically performance formation of Taiwanese folklore religion, known as 'Wen Zhen' (martial array). The performers wear vibrantly coloured makeup, costumes, and wield the instruments throughout the tour to perform in important pilgrimages and ritual festivals. Since the mentoring of the ritual practice varies from person to person, and that the convergence of multi-traditional influences carries quite an impact, the martial array troupes would vary in their numbers of participants (in three, five, eight and nine etc.), the makeup and costume, as well as the movements and postures.

The Lead General is one of the 'Jiang Twan' formations. When Huang and his troupe debuted the Lead Generals performance in 1946, there were only two performers: one was assigned to play General of Grow; the other, General of Lessen. *'The Commemorative Album Celebrating the 260th Anniversary of Hsinchuang Dizang Temple's Founding'* (Chang, 2018) notes.

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19) National Cultural Heritage Database, Bureau of Cultural Heritage. Retrieved from https://nchdb.boch.gov.tw/assets/overview/folklore/20101012000002.
20) The host of the incense burner is a local man who is selected each year to organize a major ritual festival event.

> …to enrich the variation of formation for the night patrol and the day patrol, two Generals of Grow are assigned in the troupe, in which the left one holds a sceptre with flaming shape and a set of handcuff; the one on the rights carries a tiger-head shape sceptre and a set of handcuffs. A General of Lessen sits in between the two Generals of Grow by wielding a trident and a command flag.

Over time, the regular formation started to expand in size, becoming a three-member troupe, consisting of a General of Lessen in the middle, two Generals of Grow on both sides. Nowadays, five- or nine-member formations are not uncommon.

The Lead Generals Performance Troupe of Touqianzhuang is currently lead by Hung-Chieh Lin and Chia-sheng Lin. The troupe has routine training activities for the fixed team members, who have strong community ties. Many veteran performers have stayed on to mentors novices. They take great pride in their steadfastness in honouring the tradition during every one of the exercise session and footwork: every move is executed carefully to uphold the spirit of this iconic folk ritual that they have inherited from the generations before. Master Chih-Wei Chen says,

> …the traditional footwork arrangement that Touqianzhuang troupe inherited is known as a 'Three-step Salute' (Sān Bù Zàn), which is passed on to members only. We do not concern ourselves with showy moves, such as tossing our spears to the air. That's just showmanship, and has no part in the authentic Lead Generals performance ritual. Historically, when generals fight on the battlefield, they do not give up the weapons (spears) easily.

The ritual figures setting of Touqianzhuang's Lead Generals includes two Generals of Grow, the General of Lessen, a guide boy, the Tiger Deity (Tiger General), the Seventh Lord, the Eighth Lord, and the Yin Yang Controller (personification of the union of yin and yang) totalling nine.

Only the first five figures would be joining the ritual parade. The guide boy is assigned to stand on the left, and Tiger Deity on the right, to lead the procession, followed by the two Generals of Grow, and the General of Lessen standing in the middle to bring up the rear. Starting in 2018, to address new challenges and in consideration of its historic inheritance value, Touqianzhuang Troupe's parade for Hsinchuang Dizang Temple's annual ritual festival

expanded in size to include seven members; the new setup is joined by the Seventh Lord and the Eighth Lord. The change is intended for the training of young performers as they present with senior performers, to build a sense of rapport. The above measure has strengthened the bond between different generations of performers in Touqianzhuang troupe; it has also set a beautiful example followed by other ritual troupes in Taiwan (Syu, Chen & Tu, 2020).

Figure 6
Before the night patrol, the group photo of Touqianzhuang's Lead General taken in 2003 (21)

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21) Source: Master Chen Chih-Wei.

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The cultural heritage is considered a monument, a collection of objects, and defined accordingly as tangible cultural heritage. The cultural heritage, which cannot be touched, is known as intangible cultural heritage. The intangible character, in this context, is to be understood as an element relying almost exclusively on the transmission of knowledge through community members. Furthermore, the intangible character of the collection contrasts with the nature of its preservation which relies usually on its material documentation. However, gaps in the oral interpretation, visual appearance and material documentation are inevitable and with that in mind, this study is hereby to position that the digital approach can fill/ bridge the gaps in the following section.

The Methodology of the Digital Documentation

This study firstly reviews the relevant practices of motion capture in performing arts and martial arts as its reference models. Space accuracy is essential since motion capture of Lead Generals' performance has to capture the movements of multiple figures and instruments simultaneously; that being said, the Optical Motion Capture program is adapted in this study.

In order to better understand the authenticity of the ritual performance, the fieldwork with participant observations was conducted before proceeding with the motion capture stage. The research team filmed the rehearsal of Touqianzhuang' Lead Generals for the annual pilgrimage of Hsinchuang Dizang Temple in April 2018. All team members participated in the ritual festival's day patrol on 13 June 2018 (May 1 of Lunar Calendar). The above gives the team an authentic experience of folk formation and festival culture. Moreover, the first-hand observation in situ and the collecting data are beneficial for the communication with the Master performers; it also enhances understanding of the movements during different stages of capture in the studio, and data processing.

In the digital documenting stage, the China University of Technology's motion capture studio offers the whole-body motion capture for one to three figures, with real-time monitoring and preview, but excludes the facial expressions and finger movements. The studio configures with six Raptor-H digital cameras and eight Eagle cameras. The effective capture zone is 3 meter in length, 2.5 meters in width, and 2 meters in height.

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And the Motion Analysis, MA (the motion capture system with passive optical markers) is adopted for this programme. There are five troupe's performers, aged between 25 and 50 years-old, participating in this study.

Each transcription, including the dress set, falls between four and six hours, for about eight to ten sets of movements in an average of a thousand and three hundred seconds per set. The special suit for motion capture is made in stretch fabric with attached Velcro for the markers.

Because the Lead Generals performance originated on the streets, or at the temple yard, the performers often improvise in their moves, instead of following a standardized, choreographed set of steps. This is why the individual performer would play their moves differently. These various details have to be recorded on the script form for reference in the stage of data processing.

The qualities of raw data and the 3D skeleton generated from the motion capture programme need to be further improved by professional software. In this step, according to the script form's records, the research team begins motion capture data cleaning with the MA (Motion Analysis) system's software, Cortex. The formats of motion capture data include .TRC, .C3D, .BVH, .FBX etc. The FBX format is adopted in this study as the final output and file storage model.

The Practice of Optical Motion Capture in Folk Performance

The first step of documenting ICH is to capture it while protecting its ownership (Perera, 2014). In this section, we will demonstrate the documentation approach in 3D digitalisation of the Lead Generals ritual performance

formation, taking place at Hsinchuang Dizang Temple, through Optical Motion Capture. The programme consists of three phases, and the study team first conducted the fieldwork by interviewing the Masters, and moved to break down the distinguishing features of the performance movements for the capture setting. Next, the team adopted the motion capture technology to reproduce those movement nuances accurately and vividly into a 3D digital motion database.

The third stage involves transforming motion data curated into a VR- and AR-illustration system for feasibility verification, so as to ensure further value-adding applications.

As Kung Fu masters with legendary and refined techniques are aging, their artistry should definitely be captured and preserved in a way that could minimize the loss in translation. In order to document the various authentic martial arts styles before they disappear.

The Archive team conduct the complete four-dimensional analysis of Hong Kong martial arts applicable to numerous other performance-based activities. It builds upon extensive work carried out in dance annotations.

Digital Documentation of Performance Arts

Motion capture technology can sense the analogous motions of objects in space and record them as digital data. Comparing with the Master's oral narratives, 2D images, and documentaries, the series of movements and postures captured in ritual performance arts of the digital format can be better demonstrated, in terms that it offers a more panoramic capture of nuanced features, as well as robust scientific data for further analysis.

This approach has been trending globally, as it can effectively transform digitally-preserved performance art into a compelling training programme, animation production, interactive displays, and other value-adding applications.

In Europe, the Dance Motion Capture Database programme helmed by Dr. Andreas Aristidou **(22)** curated a digital archive of dances in 2012 to include state-of-the-art motion capture technologies, smartly utilized to record and archive high-quality motion data of expert dancers performing traditional dances.

Apart from digitizing intangible cultural heritage for preservation purposes, the lab is committed to enhancing community awareness of its dance heritage.

Another pioneering project on the use of motion capture is the Hong Kong Martial Arts Living Archive **(23)**, which is a cumulative collaboration between the International Guoshu Association (IGA) and the City University of Hong Kong.

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22) The Graphics and Virtual Reality Lab, University of Cyprus http://dancedb.eu/#.
23) FringeBacker, Hong Kong Martial Arts Living Archive, https://www.fringebacker.com/en/projects/hk_martial_arts_living/.

With many legendary Kung Fu masters confronted by the pressure of aging, there has been a growing interest in effectively preserving their masterful artistry and experience for the generations to come.

In a move to document the various authentic martial arts styles before they disappear, a dedicated team representing.

The Archive began to conduct a comprehensive, four-dimensional analysis of Hong Kong martial arts versatilely applicable to numerous other performance-based activities.

The project builds upon the extensive work carried out in dance annotations that's memorable and timeless.

Concerning cross-boundary practice, the Coventry University's Centre for Dance Research (C-DaRE)**(24)**, headed by Professor Sarah Whatley, launched a three-year Research and Innovation Action in 2016 funded under the European Union's Horizon 2020 Programme — Whole-Body Interaction Learning for Dance Education (WhoLoDancE).

Preserving the Cultural Heritage is one of its main objectives, as it seeks to 'create a proof-of-concept motion capture repository of dance motions built-in methods allowing interpolations, extrapolations and synthesis through similarity search among different compositions documenting diverse and specialized dance movement practices, and learning approaches'**(25)**.

WhoLoDancE is considered (Rizzo et al., 2018) an innovative approach that leverages technologies to digitalise, preserve and convey the intangible cultural legacy of dance, and bring about a profound transformation in the way this long-standing art is traditionally created, learnt and taught.

In Taiwan, Assistant Professor Tai-Jui Wang began applying sensor motion capture to digitalise Chinese Opera performance movements into a database (Wang, 2017).

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24) Centre for Dance Research, Coventry University. https://www.coventry.ac.uk/research/areas-of-research/centre-for-dance-research/
25) WhoLoDancE website. http://www.wholodance.eu/about-wholodance/

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The Bureau of Cultural Heritage later launched a Digital Technology Experience Project for Taiwanese Glove Puppetry (pò-tē-hì)**(26)** in 2017 by creating smart gloves to track and catalogue performance moves of Hsi-Huang Chen, a veritable 'sLiving National Treasure Master.'

However, the gloves' tracking capability was inadequate and the digital data curated did not suffice kinetically to reproduce the same set of movements.

Taiwan, being one of the world's fastest-ageing countries, must exhaust all means possible to preserve its rich cultural legacy through digital technology applications. Bala (2012) has explicitly described the importance of preserving dying heritage using new technological tools.

The traditional oral history and intangible heritage, according to Bala, are not being passed down to the next generation in an effective fashion. As soon as the old generation perishes, the socio-cultural memories they represent will also dissolve.

Although the globalization and modernization processes have affected the transference of oral history and intangible cultural heritage (Bala, 2012), the other side of the coin is that the advent of technology has enabled a support system to preserve the cultural and collective memories of the communities.

It is therefore our responsibility to make optimum use of digital tools and preserve our ICH for the present and future. Digital technologies help to convert intangible heritage into tangible one.

The Optical Motion Capture Program of Lead Generals' Performance

The capture process consists of four specific stages, ranging from including Pre-investigation, Real-time Capture, Data Processing, to demonstration, as illustrated in Figure 7.

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26) Cultural Heritage Park, Ministry of Culture, VR Experience in Performing Taiwanese Glove Puppetry. https://tccip.boch.gov.tw/Activity_detail?id=1537&ATID=1

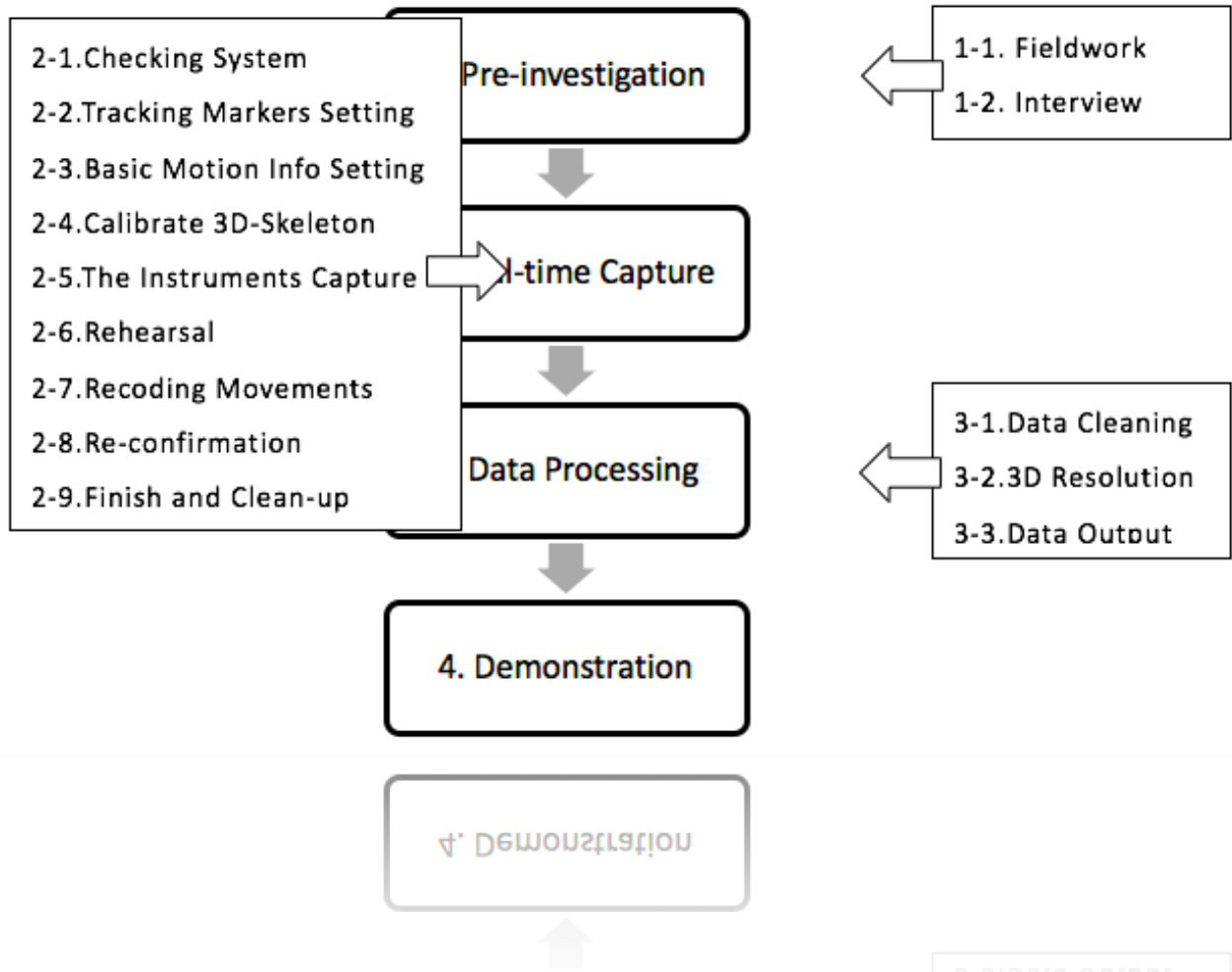| 2-1.Checking System		1-1. Fieldwork
2-2.Tracking Markers Setting	Pre-investigation	1-2. Interview
2-3.Basic Motion Info Setting		
2-4.Calibrate 3D-Skeleton		
2-5.The Instruments Capture	l-time Capture	
2-6.Rehearsal		
2-7.Recoding Movements		3-1.Data Cleaning
2-8.Re-confirmation	Data Processing	3-2.3D Resolution
2-9.Finish and Clean-up		3-3.Data Output

4. Demonstration

Figure 7.

Before the capture, the technical staff have to go through a comprehensive calibration; exclude the abnormal state, if there is any. The team has to verify the sequence of recording and edit the script form for the captures.

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27) Source: Authors.

There are two sets of basic movement:

The first is the standard moves called T-Pose. During the recording process, the performer is asked to stand upright at the starting position (as the Y-coordinate) by seeing straight ahead (as the Z-coordinate) with the feet shoulder-width apart, and two arms flat-raising laterally, palms facing down (as the X-coordinate).

This is the T-Pose, for setting the individual makers' numbers and distances for establishing the template of the Marker Set.

The second set is Range of Motion, ROM. It enables the system to determine the changes of marker's distance to track the correct marker during the recording. Normally, the ROM includes three movement-determinations: Joint Rotation, Physical Contact, and Stretching.

When the recording begins, the performer starts in the T-Pose, then proceeds with the performance sequence of Lead Generals, and rounds off the presentation back to where he starts -- the T-Pose.

Figure 8
T-Pose (right) and ROM (left). **(28)**

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28) Source: Ibid.

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The crew installs additional cameras at the filming set to record the capture programe synchronously, such as curating the nuances in the performers' facial expressions. Meanwhile, the senior Master, who acts as a performance supervisor, also joins the monitoring process with the technician to ensure the high-quality capture effects possible.

The qualities of raw data and 3D skeleton generated from the motion capture programe need to be further improved by professional software before they are transformed into 3D data. On the other hand, although the optical motion capture system is widely versatile, highly accurate, with minimal disruption to performers in motion, it nonetheless generates optical noises caused by the refraction of light; the performer's limbs covered by the optical markers also interfere with signal reception.

The establishment of Marker Set **(29)**, which is designed with accuracy in the beginning stage, can rectify these drawbacks.

In the Lead Generals performance, the performers often wield and brandish their instruments in a quick motion. These movements are easily recognised by the system as the noise or spikes in data collection. However, over-processing of these kinds of miscalculated data should be avoided as much as possible; it could negatively impact the momentum of the action sequence and the pause points during the performance. This is a critical issue in need of addressing for conducting a motion capture programme to simulate a ritual performance in the future.

Demonstration of Database and Animation

The optical motion capture programe adopted by this study catalogues the formation performance of Touqianzhuang's Lead Generals. Additionally, the research team also referenced folk arts and ritual figures in the fieldwork to supplement the project.

The integration of fieldwork resources with the motion capture data into the 3D animation can contribute to the immortalization of this folk legacy rooted in ritual formations.

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29)The Optical Motion Capture documents the locomotion of an object in a 3D space by the optical markers. For the purpose of capturing an individual's body movements, it has to take between 40 and 60 markers on a performer. The various combinations are linked by the above markers called Maker Set.

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The three sets of recorded digital information of 3D motion are then transformed into animation for illustrating their ICH meanings as follows.

Figure 9

(1) The Formation of Appointing Generals

'Appointing Generals' is a ritual that involves reporting the parade's routes and purpose to the Gods for approval and blessings.

It is a practice exclusive to Hsinchuang Dizang Temple's Lead General that consists of a worship service, in which the deities are informed of the missions and routes of the annual pilgrimage. The ritual is launched right after the worship ceremony.

Three Lead Generals salute the Gods for getting orders in a row; then, the two generals on the right and left sides make a circuit of the temple yard in the posturing of reviewing troops. Shortly after, the two generals re-join the general in the centre, reporting the inspection process to the Chief God.

The above procedure must be repeated three times. Touqianzhuang Lead Generals is the only religious performance troupe in Taiwan that still abides this three-circuit ritual formation. Since the ritual takes place in the courtyard before proceeding to the temple gate, the motion capture in the video was filmed in sections to overcome the spatial limitations.
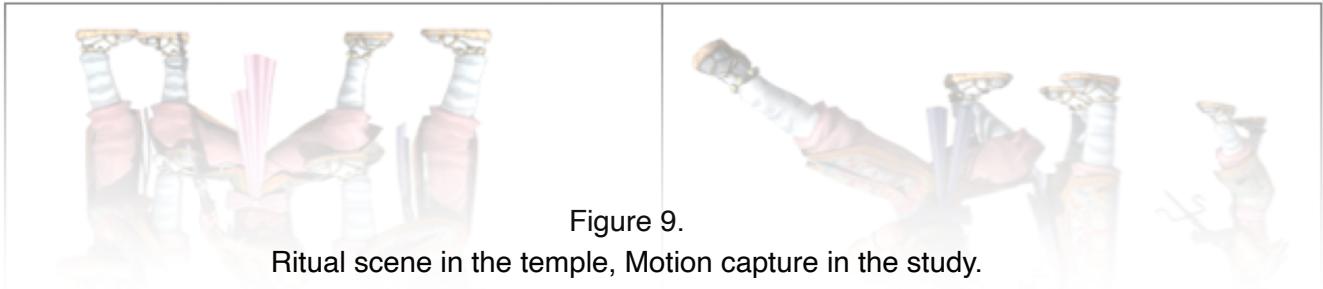
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Animated Characters

Figure 9.
Ritual scene in the temple, Motion capture in the study.
The Formation of Appointing Generals **(30).**

(2) The Formation of Worship Altar

This particular ritual aims to panegyrize the altar where the Gods of neglected ghosts are enshrined. According to visual analysis produced during the crew's fieldwork, the 'Three-step Salute' (Sān Bù Zàn), a highly ritualistic progression, is the most iconic footwork in the Lead Generals performance. The performer first takes a step forward, foot firmly planted in the floor, followed by two subsequent steps. Three steps constitute one section.

The ritual formation includes the hallmark 'Three-step Salue,' which cycles between processions, and those intervals between formation changes, to take place taking place between sections, and concludes in one last steady stance.

Ritualistic progression taking place outside the temple

Figure 10
The Formation of Worshiping Altar. **(31)**

Motion Capture in the Studio.

Animated Characters

Figure 11
Ritualistic progression taking place on the street.
The Formation of Street Worship. **(32)**

(3) The Formation of the Street Worship

This ritual is usually demonstrated in places where accidents are reported (e.g. car wrecks in crossroads and intersections with car accidents) to cleanse the area of any evil presence. Additionally, the research team referenced folk arts and ritual figures in the fieldwork, and found that 3D animation footage produced from the integration of fieldwork findings with motion capture data can tremendously contribute to the lasting legacy of ritual formations.
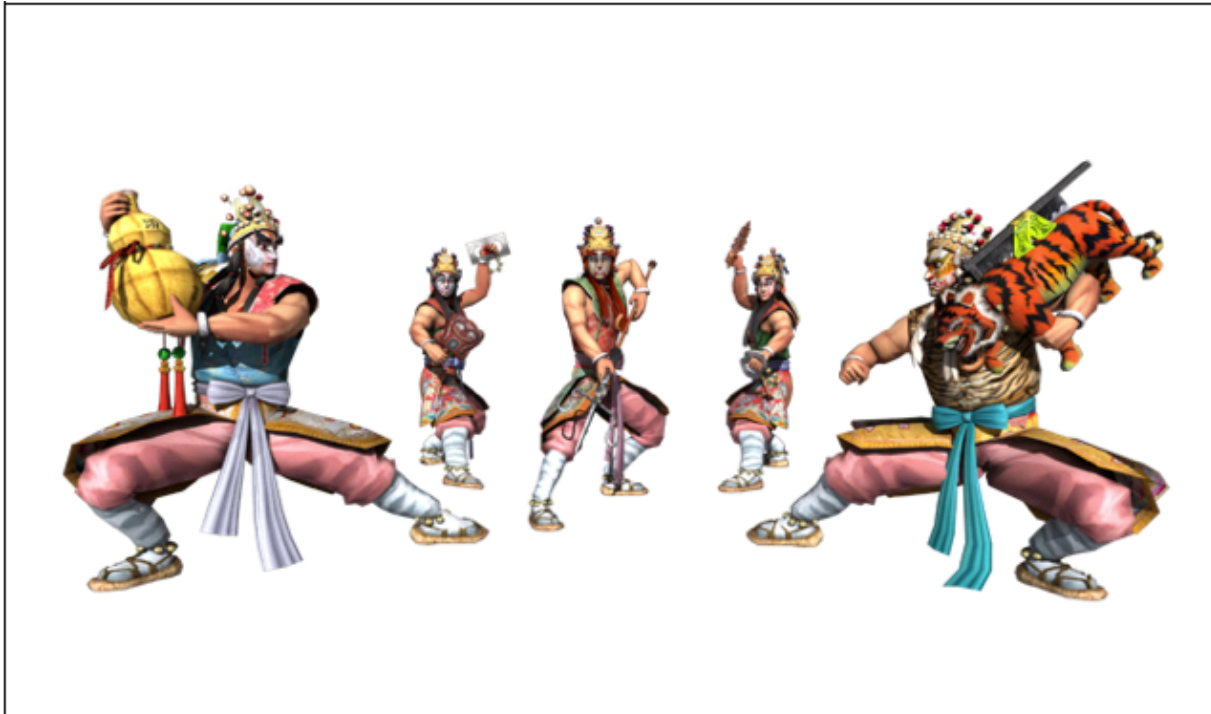
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31) Source: Ibid.
32) Source: Ibid.

Figure 12
VR (top) and AR (bottom) Experience Exhibition in
Cultural Heritage Park, Taichung. **(33)**

Moreover, these 3D animation pieces can be further developed into VR (Virtual Reality) demonstrations, thus drawing the audience into an immersive experience of Lead Generals performance from a variety of perspectives. Also, the AR (Augmented reality) facilities can dissolve the limitation of time and space by combining real-time guided exhibition, to spotlight the Lead Generals performance in a physical environment.

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33) Source: Ibid. Cultural Heritage Park, Ministry of Culture. https://tccip.boch.gov.tw/

Conclusion

The age of the 'born digital' ethnographic object has upgraded the heritage documentation process to an unlimited circulation in the form of digital copies and remixes. The safeguarding process of the intangible and the digital is thus understood as interwoven projects.

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34) Source: Ibid.

As museum scholar, Fiona Cameron argued (2008) that "digital media has become embedded in a cycle of heritage value and consumption, and the broader heritage complex".

While the documentation of ICH is considered one of the safeguarding measures, it also represents a vital milestone, as intangible expressions can now transition to digitized cultural heritage preservation chronicles.

The proliferation of digital tools can thus now be widely accessed for the increasingly interconnected projects of documentary recording, archiving, and sharing, amplifying the scale of digital production in heritage preservation initiatives (Cameron & Kenderdine eds., 2007; Kalay, Kvan & Affleck eds., 2008; Hennessy, 2013), and has implicated digital documentation in processes of making media public and transparent by advancing the circulation of ICH from local contexts to the world. As Hand (2008) argued that digitization enables and intensifies processes of circulation, flattening, de-territorialisation and de-differentiation.

The Capacity-Building to Interdisciplinary Practitioners

It is important to keep ICH sustainable to ensure its economic viability. For this purpose, it should be in use continuously, to become a living heritage transmittable from one generation to another, all the more reason to make the safeguarding of ICH through multimedia applications in the preservation.

The captured data can be made widely available on museum websites for the present and future generations to enjoy. Community-based productions of multimedia aimed at documenting, transmitting, and revitalizing intangible heritage are significant sites in which local cultural property discourses are articulated and put into practice.

For the current society and the upcoming generations, digital media is the necessary literacy tool with the capacity to achieve the legacy inheritance. It offers a robust solution to advance digital documentation. Digital technologies can help the community and society to transmit non-material cultural into a material format to ensure the conveyance of ICH across the generations.

As modern society continues to experience high-tech development at a rapid pace, intergenerational dialogues/connections in every aspect of the human experience are getting

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Figure 13
The Senior Master Supervises Young Performer
during the motion capture. **(34)**

diluted day by day. It could hinder the collective memories and the significance of cultural narratives from being passed on to the next generations.

At this point, it is important to transmit these rather non-material or oral narratives through digital media implements, to establish digital inventories before they dissolve into oblivion. Especially, it would be greatly helpful to raise awareness of the value of ICH among the young generation through an effective, digital communication process. The spread of the COVID-19 Pandemic in 2020 had forced major temple fairs in Taiwan (e.g. Dajia Matsu Pilgrimage)**(35)** to be cancelled, postponed or downsized. The Hsinchuang Dizang Temple's annual worship ceremony for the neglected ghost was also suspended this year.

The Lead Generals performing troupes organised by residents of Hsinchuang also cancelled the training and rehearsal activities. Whereas, thanks to the successes with the previous programme, and a sense of understanding solidified between the troupe and the research

team, the performance troupe was more open to adopting a digital documentation method for preserving and passing on its legacy.

The outcome of the digital documentation and the following applications – derived from findings of this study -- is beneficial to the impartation of Lead Generals' signature performance footwork and formation; it also sets an invaluable edutainment example to the public in the digital integration (AR, VR and Amination) of ICH in Taiwanese folk culture. Although deprived of the opportunity to present in this year's ritual parade, the Touqianzhuang troupe is nonetheless making a positive contribution to the innovative, ongoing motion capture programme — 將 (Jiang) Fusion: Experimental Creation Project of Volumetric and Motion Capture, where the research team is offered a wonderful practice opportunity in conducting the 4DViews, a Dynamic Volumetric Capture System **(36)**.

Figure 14
A Clip of將 (Jiang) Fusion Documentary. **(37)**

35) ChinaPost, Dajia Matsu Pilgrimage postponed due to outbreak, 27 February 2020.
Retrieved from https://chinapost.nownews.com/20200227-1090678
36) 4DViews, IP Lab, Ministry of Culture. https://iplab.culture.tw/home/zh-tw/dynamic
37) The project is funded by IP Lab, the Ministry of Culture. https://www.youtube.com/watch?v=omG9bBA69_g.

The participatory programe in motion capture by Hsinchuang Dizang Temple Lead Generals, where the transformation of ICH into digital heritage is achieved, represents a landmark moment in which community-based (Touqianzhuang troupe) communication of the interpretation of documentation and cultural representation can take place.

These dialogues, as Hennessy (2013) described, can include the definition of appropriate methodologies for intangible heritage documentation and the digital circulation of representations of local material culture, archival media, and intangible expressions.

The experience picked up during this study also echoes the conclusion reached in the Convention, that not every ICH is safeguarded, but only the one recognised by its communities as theirs and that provides them with a sense of identity and continuity is to be safeguarded.

What's Next in the Post-COVID-19 Era

In the global context, ICH is challenged to contaminate itself by technology, where digital media might become a key to its long-term viability. The visualisation process in its immateriality is to be thought in the sum of numerical data accessible through computers.

The result is that the digital media concerning graphics, moving images, sounds, shapes, spaces, and texts which have become computable (Manovich, 2001). Considering the experience of this study and the present situation of the global epidemic, as Hand (2008) argued, the focus should be placed upon the emerging conventions and practices of digital media designers as they organise the data which structures the audiences' experience.

As illustrated in this study, Hsinchuang Dizang Temple Lead Generals would only demonstrate their unique rituals, per the dictates of tradition, within a certain timeslot at the temple yard once a year. The presentation is not accessible to the general public.

As COVID-19 swept the world, the performing activities and events have either moved online, or conducted in virtual or long-distance.

Taiwanese folk ritual activities were no exception; the ritual troupes are looking for new solutions by moving the performance from an actual locale to the Cloud.

And even though You Qian Zhuang troupe cannot demonstrate the parade formations in the pilgrimage this year, the masters nonetheless donned ritual costumes and put on facial makeups for a marker event. The above-mentioned visual documentation can be also seen as part of 'Rapid Response Collecting'**(38)** during the challenging times.

We might argue that the substance of cultural practice resides in the fluidity of the 'everyday occurrence'. As revealed by this study, the virtual can also be seen as a 'fluent' representational environment of the practice itself. It can be referred to the statement made by UNESCO (n.d.),

> …Elements of Intangible Cultural Heritage continuously evolve, from manifestation to manifestation, while being transmitted from person to person and from generation to generation. The viability of intangible heritage practices relies on the ongoing transmission of the special knowledge and skills that are essential for their enactment or embodiment.

Digital documentation and circulation of representations of ICH over the Internet have created opportunities for the communication and interpretation of local cultural legacy discourse. In this study, the Master and performers who join the motion capture programme are residents of Hsinchuang District, New Taipei City. This collaboration in digitalising Lead Generals performance is an interdisciplinary experience for both the troupe and the research team.

From the perspective of ICH safeguarding, the meaningful community participation in digital documentation of ICH, and the subsequent presentation of oral narratives, photographs, and other media, opened up a space for new narratives and debate over the authenticity of ICH.

From the viewpoint of effectively imparting ICH, its circulation in digital form offers not only a wide-spread platform and an easy-transmit channel in share, but also the practice of 'cultural appreciation' in the application of 3D animation, AR and VR.

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38) As quarantines, lockdowns and shelter-in-place roll on, museums around the world are taking an opportunity to document these historic presentations right after/ during the progression. It is a type of museum collection strategy known as 'rapid response collecting.' It is a great way to ensure that the institution has the materials to be able to tell an event's story later on.

Digital documentation of ICH creates a platform with interdisciplinary and integration in the field of heritage and media. It introduces the digital world to the Taiwanese folk legacy but also opens a gateway for Taiwanese ritual legacy and wonders to find technological innovation and support.

Figure 15
Face makeup for the Leading Generals event. **(39)**

39) Source: You Qian Zhuang Lead Generals Facebook Page: https://reurl.cc/R15LO9.

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